Eurasian Development Bank
Manager of the EurAsEC Anti-Crisis Fund Resources

EVALUATION REPORT

on the Preliminary Application

of the Republic of Armenia for an Investment Loan
Financed with the Resources of the EurAsEC Anti-Crisis Fund for an
Irrigation System Modernization and Institutional Capacity Building Project

in the amount of US $ 40 million

May 2013
Republic of Armenia  
Fiscal year: January 1 – December 31

Currency and equivalent units  
As of May 15, 2013

<table>
<thead>
<tr>
<th>Currency unit</th>
<th>Dram</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Russian ruble</td>
<td>13.3321</td>
</tr>
<tr>
<td>1 Kazakhstani tenge</td>
<td>2.7588</td>
</tr>
<tr>
<td>1 US dollar</td>
<td>416.9967</td>
</tr>
<tr>
<td>1 Euro</td>
<td>542.2993</td>
</tr>
</tbody>
</table>

Weights and measures: metric

Abbreviations
ACF, the Fund – Anti-Crisis Fund of the Eurasian Economic Community  
CA – Current account  
CIS – Commonwealth of Independent States  
EDB, the Manager – Eurasian Development Bank  
EurAsEC – Eurasian Economic Community  
FS – Feasibility study  
GDP – Gross domestic product  
GNI – Gross per capita income  
IDBs – International development banks  
IFOs – International Financial Organisations  
PIU – Water Sector Programmes Implementation Unit of the Republic of Armenia  
RA – Republic of Armenia  
SCWM – State Committee of Water Management of the Republic of Armenia  
TF – ECA Capacity Development Trust Fund of the WB (ECAPDEV)  
WB – the World Bank Group  
WUAs – Water user associations of the Republic of Armenia

The document was prepared by Eurasian Development Bank:

Sergey Shatalov  
Deputy Chairman of the Management Board

Ulan Sarbanov  
Programmes Division Head, ACF Department

Olga Sosnina  
Leading expert, ACF Department, Project Manager

Anton Dolgovechny  
Deputy Head, Social and Economic Policy Division, ACF Department

Ardak Tashenov  
Head, Strategic Analysis and Monitoring Division, EDB

Arman Akhunbaev  
Chief expert, Country Analysis Division, EDB
CONTENTS

I. Loan Terms Sheet as per Manager’s Recommendation .............................................................. 4
II. Manager's Appraisal of Preliminary Application................................................................. 5
III. Evaluation Report Substantiation ......................................................................................... 7
General Part ............................................................................................................................................ 7
1. Overview of Economic and Social Developments in RA ......................................................... 7
2. RA Foreign Economic Ties with ACF Countries ...................................................................... 9
3. Status of Agriculture in RA ......................................................................................................... 11
Project Description ............................................................................................................................ 15
1. Project Objectives and Components ........................................................................................... 15
2. Project Financing Needs ............................................................................................................... 18
3. Project Current Status Description ............................................................................................. 19
4. Projected Economic Effects of Project Implementation ............................................................ 19
5. Project Consistency with the Fund’s Objectives ......................................................................... 21
6. Project Financing Scheme ......................................................................................................... 23
7. Substantiation of Resorting to ACF ........................................................................................... 24
8. Preliminary Project Risk Assessment ......................................................................................... 25
Annex 1 ................................................................................................................................................. 28
Annex 2 ................................................................................................................................................. 29
Annex 3 ................................................................................................................................................. 30
Annex 4 ................................................................................................................................................. 31
## I. LOAN TERMS SHEET AS PER MANAGER’S RECOMMENDATION

<table>
<thead>
<tr>
<th>Borrower</th>
<th>Republic of Armenia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsible agency</td>
<td>Ministry of Territorial Administration</td>
</tr>
</tbody>
</table>
| Size and terms of financing | • ACF loan amount: US $ 40 million (to be adjusted after preparation of a detailed Project FS).  
• Interest rate: 1.65 %  
• Risk premium: the size is proposed to be established after the detailed Project analysis is performed.  
• Front-end commission: 0.2 % of the loan amount.  
• Maturity, including the grace period: 20 years.  
• Grace period for loan principal repayment: 5 years.  
• Project co-financing by the Borrower: US $ 10 million (20 % of the total Project cost).  
• Grant components of the ACF loan: 32.58 %. |
| Operation type | Investment loan |
| Sector         | Agriculture (irrigation) |
| Key performance indicators | The final list of performance indicators is planned to be prepared during the Project preparation. The tentative list includes:  
• reduced water losses in irrigation systems;  
• lower operating and maintenance costs;  
• larger area of irrigated land; and  
• eliminated earth leakages posing a threat for inhabited localities. |
| Main objectives | • to ensure affordable and reliable water supply for water users;  
• to retrofit part of the distribution networks to make them consistent with the current land management model; and  
• to ensure the continuity of institutional reforms and build the capacity of water user associations. |
| Project company | Water Sector Programmes Implementation Unit, which is part of the system of the State Committee of Water Management of the Republic of Armenia |
| Key risks and their mitigation | The project is characterised by project, environmental, social, maintenance risks, and risks related to the Project operator and counterparts.  
To improve the quality of Project preparation and mitigate the Project risks, a TF grant (US $ 495 million) will be used. In addition, to mitigate the risks, the Manager proposes to be guided by the WB procurement and environmental and social impact assessment policies in Project preparation, and get a WB expert involved in the Project monitoring and appraisal. |
II. MANAGER'S APPRAISAL OF PRELIMINARY APPLICATION

This Evaluation Report concerns the preliminary application of the Republic of Armenia (hereinafter referred to as the Applicant) for an investment loan financed with the ACF resources (hereinafter referred to as the Loan) in the amount of US $ 40 million received by the Bank on April 16, 2013 by letter No. 1215-51-214 (hereinafter referred to as the Application). The key declared objective of the Loan is to finance the *Irrigation System Modernization and Institutional Capacity Building Project* (hereinafter referred to as the Project).

Section three of the document contains substantiation of the Evaluation Report on the preliminary application prepared by the ACF resource Manager (hereinafter referred to as the Manager).

Having considered the Application, the Manager offers the following recommendations and Evaluation Report for consideration of the ACF Council:

*The Application is consistent with the Fund’s objectives, directions for provision of financing, the procedure and terms for Fund resource provision set out in the Treaty on the Establishment of the Fund, the Fund Statute, Regulation on the use of ACF resources for providing investment financing, and decisions of the Fund Council.*

*The Application is formalized in line with the requirements of the Fund.* The level of the Application preparation—from the point of view of availability of the information needed to perform the appraisal, and availability of justification documents needed for making a preliminary decision on the level of project preparation—is satisfactory.

*The Project is consistent with the Fund’s objectives.* The Project supports the objectives set out in the Sustainable Development Programme of the Republic of Armenia in relation to the irrigation system rehabilitation, water supply quality improvement, and application of democratic management principles by water user associations (WUAs). A well developed irrigation infrastructure is needed for sustainable development of Armenia’s agriculture; therefore the Project implementation will promote improved sustainability of the economy and the balance of payment of the Republic of Armenia. The Project is also characterised by a significant integration effect: its implementation will enable expansion of agricultural exports from Armenia to the CIS countries. The Project can also have a moderate indirect effect for the development of single agricultural markets of Armenia and its neighbouring countries.

*The Republic of Armenia has complied with all the commitments set out in the Treaty on the Establishment of the Fund, the Fund Statute, and decisions of the Fund Council.* The commitment to pay in the initial cash contribution was fully met. According to the information available to the Manager, the Republic of Armenia has no unsettled debt to the Fund member states or to the core international financial organisations. Relevant justification letters will have been received by the date the Fund Council adopts a decision on extending the Loan. The Republic of Armenia has not received loans from the Fund’s resources up to now, and the amount requested is within the limit established for access of the Republic of Armenia to Fund resources.
To ensure a high quality of Project preparation, a grant of the Capacity Development Trust Fund for the countries of Europe and Central Asia (TF, ECAPDEV)\(^1\) of US $ 495,000 was approved. According to the rules of this Trust Fund, World Bank procedures should be followed at project preparation. To ensure proper control over the quality of preparation of the Project FS, Project documentation, the Project environmental and social impact assessment, and efficient use of resources, the Manager will interact with the World Bank in the process of Project documentation preparation.

*The Manager recommends to be guided by the World Bank’s procurement rules and procedures in Project implementation.* The Manager is currently completing preparation of its own procurement rules and procedures, and is developing the rules of spending resources while planning to introduce them by the date of the Project preparation completion to be applied thereafter. The Manager’s procedures will provide for an opportunity to use procurement procedures of other IDBs in the framework of ACF projects. Since the Project is a follow-up to the WB programme, and during the decade the PIU has accumulated significant experience in following the World Bank’s procurement policies, the Manager proposes to consider the possibility of using the World Bank’s rules at the stage of Project implementation with relevant support provided by procurement experts of the World Bank.

*The Manager will monitor and perform appraisal of the Project in accordance with the EDB Investment Project Social and Economic Effect Monitoring Methodology.* The monitoring procedures will involve on-going collection of information about the progress in Project implementation, on-going analysis of the Project risks by the Manager, and regular visits of the Manager’s experts to the Project sites. Since the Project preparation is financed with the resources of the World Bank-managed TF grant, and the Project is a follow-up to the WB programme, the Manager proposes to consider the possibility of getting a WB expert involved in the Project monitoring and appraisal.

*The Project will be implemented in accordance with the Manager’s Project Cycle Regulations, while taking into account the specifics provided for by the Regulation on the Use of ACF Funds for Providing Investment Loans.* In-house documents of the Manager contain detailed procedures of Project structuring, risk assessment, and resource disbursement. The procedures provide for disbursement of funds in tranches after the Manager receives required justification documents (contracts, invoices, and other documents).

*The Manager recommends to be guided by the World Bank’s environmental and social policies in the process of the Project implementation.* The Project preliminary appraisal has shown that its implementation may have a number of environmental impacts. The environmental and social policies of the Manager provide for an opportunity to establish additional requirements to ACF projects, including application of environmental and social policies of other IFOs. The Project is a follow-up to the multi-year irrigation programme of the World Bank in the Republic of Armenia (RA), thus, to ensure compliance of the whole programme with high standards in the area of mitigating such impacts, it is reasonable to apply the environmental and social policies of the World Bank (WB) in the framework of this Project too.

---

\(^1\) The TF was created in 2012 with the resources provided by the Government of the Russian Federation and is managed by the World Bank. Financing investment project preparation with the Trust Fund’s resources enables faster and better quality project preparation, and building the country’s institutional capacity.
III. EVALUATION REPORT SUBSTANTIATION

General Part

1. Overview of Economic and Social Developments in RA

Since the early 1990s, RA economy has undergone significant changes. In the last years of the USSR, Armenia supplied equipment, textiles, and other industrial products to Soviet republics in exchange for primary commodities and energy resources. As a result of the market reforms implemented, large agro-industrial complexes of the Soviet era disappeared. Multiple small farms, excavation of metal ores (molybdenum, gold, copper, etc.), production of food stuffs, beverages, main metals, and electricity generation acquired key importance. Agriculture\(^2\), trade, construction, and processing industry are the most significant sectors in the new structure of the economy (Figure 1).

![Figure 1. Production Structure of RA Economy (% of added value), 2012](image)

Source: National Statistical Service of RA

In 2012, per capita GDP was US $ 3,259 in RA\(^3\). According to the WB’s classification, Armenia is part of the group of “middle-income countries”, while judging by its GNI, the country is closer to the lower boundary of the range set for this group\(^4\). In spite of the comparatively high level of urbanisation, about 36 % of the population reside in rural areas. The key challenges of the country’s social and economic development are poverty and unemployment. According to the WB data, the poverty rate was around 35 % as of 2011, while according to the information of the National Statistical Service of RA, the unemployment rate was 16 % in 2012\(^5\). The problems related to poverty and unemployment are most prominent in rural areas.

\(^2\) During the period of 2001 to 2008, owing to the faster rate of growth of those sectors, which focused on domestic demand, the share of agriculture in GDP dropped from 25.6 % to 16.3 %, while the share of other sectors, such as construction, trade, and financial sector increased, but after the 2009 crisis the share of agriculture in GDP increased again.

\(^3\) World bank. Databank.

\(^4\) According to the WB’s classification, in 2012 middle-income countries included those with the GNI ranging from US $ 1,026 to US $ 12,475.

\(^5\) The unemployment rate has a significant seasonal component, and based on the data for the fourth quarter of 2012, the unemployment rate is estimated at the level of 18 %.
Macroeconomic Situation and Structural Challenges of RA Economy

The basis for the new market model of Armenia’s development was laid in the 1990s, over the period of market reforms and high instability of the economy. In the 2000s, the rates of economic growth accelerated significantly—13% on average for 2002-2007—and became sustainable. The key factors of growth in the framework of the new development model were: remittances of labour migrants boosting domestic demand; non-tradable sectors of the economy; foreign direct investments promoting the development of the banking system, telecommunications, and mining industry; external demand and high prices for exported metal ores—the poorly diversified exports of primary commodities accounted for 70% in 2008—that made the inflow of foreign exchange dependent on the external market situation.

In spite of the large share of agriculture, its contribution to economic growth was not significant—around 1.6 percentage points on average for the specified period. Limited investments led to high volatility of development and dependence on weather factors. In the environment of limited production capacity and Armenia blockade by Turkey and Azerbaijan, these factors ensured sustainable growth of those sectors, which focused on domestic demand. That resulted in growing imports and significant deterioration of the balance of payment.

In spite of the significant amount of remittances (US $ 1.4 billion), the high trade deficit (US $ 3 billion or 25.6% of GDP) contributed to chronic current account deficit reaching 12% of GDP in 2008. That resulted in external debt growth and Armenia’s dependence on the inflow of external financing.

Vulnerability to external shocks became particularly apparent at the time of the global crisis of 2008-2009. Lower world prices for raw materials\(^6\), the economic recession in Russia and Europe—their share in Armenia’s export flow is 44%—impacted the country’s economy. The economic recession in Russia also resulted in lower remittances (-33%) and foreign direct investment (-17%). Combined with deceleration of credit to the economy, the above factors led to weaker domestic demand, both consumer and investment one\(^7\). The Government undertook the function of consumption financing through a significant increase in spending, thus containing consumption contraction. Against the background of the revenue shortfall, it resulted in a budget deficit—7.6% of GDP in 2009—and a sharp increase in the government external debt—27.5% of GDP in 2009. All the sectors of the economy were impacted\(^8\), except for agriculture, and the GDP contracted in 2009 by 14.1% in real terms.

In 2010-2012, the economic growth was largely determined by the post-crisis recovery of the economy, the flow of remittances up to US $1.4 billion in 2012, and industrial output growth. The measures taken by the government to change the economic development model to boost export-oriented sectors through containing domestic demand growth and depreciation of the local currency exchange rate generated certain results—the CA deficit declined, however, staying at a critically high level of 10.6% of GDP in 2012. Against the background of better economic development and implementation of an IMF programme aimed at streamlining public spending and improving tax administration, the status of the public finance improved, and the state budget deficit correspondingly declined to 1.6% of GDP in 2012. The government external debt, however, remains significant—about 32% of GDP as of the

\(^6\) The copper price dropped by 65% in December 2008 compared to April 2008.
\(^7\) The share of fixed investment went down to 23.8% of GDP in 2012 against 41% in 2008.
\(^8\) Especially in the case of construction with its share reaching 25% of GDP in 2008, but dropping as a result of the crisis to 12.2% in 2012.
In general, despite the high rates of economic growth and fiscal consolidation in 2012, Armenia’s economy remains extremely vulnerable to external shocks.

Project Effect for External Debt Sustainability

The budget consolidation efforts enable a positive assessment of Armenia’s debt sustainability. According to the IMF, with the budget deficit kept below 2% of GDP, the external debt to GDP ratio will be steadily declining.\(^{10}\)

The impact of the ACF loan on debt sustainability is estimated to be insignificant. The ACF loan of US $40 million—around 0.4% of GDP—on the proposed concessional terms will not result in a significant increase in the Republic’s debt burden, while the government external debt will increase by 1.3%. Moreover, the peak payments under the existing external debt fall on 2013, while the new ACF loan has a 5-year grace period, thus causing no increase in the debt service burden in the coming years.

The capacity of the Government of Armenia in the part of public investment is limited since in the environment of the high poverty rate there is no room to cut social spending. At the same time, significant investments into infrastructure development are called for to ensure sustainable development and a favourable investment climate. Allocation of the ACF loan for the irrigation system rehabilitation will enable maintaining the level of infrastructure investment.

2. RA Foreign Economic Ties with ACF Countries

Investment Flows

Recently, there has been investment growth from the CIS countries to the Armenian economy (Table 1).

<table>
<thead>
<tr>
<th>Foreign direct investment import, million US $</th>
<th>Foreign direct investment export, million US $</th>
</tr>
</thead>
<tbody>
<tr>
<td>452</td>
<td>778</td>
</tr>
</tbody>
</table>


According to Monitoring of Mutual Investments in the Member States of the CIS prepared by the EDB Centre for Integration Studies (CIS MMI), Russian direct investments to Armenia made at least US $2,814 million as of February 2013\(^{11}\) that is over half of all foreign direct investment inflow to Armenia (US $5,046 million). Kazakhstani and Belarusian businesses are also represented in RA in a relatively small volume (Table 2).

---

\(^9\) ACF calculations based on the data of the Central Bank and the National Statistical Service of RA. The country’s gross external debt is estimated at 77% of GDP against 33.3% of GDP in 2008.

\(^{10}\) IMF Country Report for Armenia No. 13/34. February 2013.

\(^{11}\) It ranks the fifth among the CIS countries and Georgia judging by the amount of Russian direct investment – 5.9%. It is an even more significant indicator as the economy of Armenia ranks the ninth among the CIS countries and Georgia by the size of its GDP.
Table 2. Foreign direct investment to Armenia from Russia, Kazakhstan, and Belarus

<table>
<thead>
<tr>
<th>Country of investment origin</th>
<th>Key sectors receiving investments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>Railway transport, gas transportation and sales, electricity generation, non-ferrous metal industry, education, banking and insurance, mobile communications, internet, and data communications</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>Banking</td>
</tr>
<tr>
<td>Belarus</td>
<td>Wholesale and retail trade</td>
</tr>
</tbody>
</table>

Source: CIS MMI

It should be noted that only a small part of all foreign investment is directed to the agro-industrial complex. Russia has invested only into one such project: in 2003, Borodino SC paid US $ 1 million for Ararat canning factory, which was then renamed as Armenian canning factory Borodino.

In recent years, Armenia has demonstrated a trend of increasing exports of direct investments. According to CIS MMI, they flow to Georgia (food, cigarette production, hotel business) and Kazakhstan (production of alcoholic beverages). The investment size ranges from US $ 1 to 4 million per project.

Trade Flows

According to official statistics, the CIS countries on average account for 20 % of RA exports and 29 % of RA imports (Figure 2).

![Figure 2. Composition of Armenian exports and imports by countries, 2011](image)

Source: National Statistical Service of RA

Exports of foodstuffs made 23 % of total exports, while imports of foodstuffs were 19 % of total imports. The share of the CIS countries in agricultural exports of Armenia is 70.4 %, of which Russia accounts for 65.2 %, Ukraine – 4.6 %, Belarus – 0.5 %, and Kazakhstan – 0.4 %. The composition of imports is somewhat different: the share of the CIS countries is 37.1 %, of which Russia represents 20.5 %, Ukraine – 12.2 %, Kazakhstan – 3.6 %, and Belarus – 0.7 %.

---

12 2012 data.
3. Status of Agriculture in RA

Agriculture is a key sector of RA economy. At the end of the 1990s, agriculture held a dominating position among sectors of the economy generating about 30 % of GDP and 50 % of employment. In 2012, the share of agriculture was 19.1 % of GDP. The share of agro-industry (production of food, beverages, and tobacco products) was 54 % of total processing industry. Around 40 %\(^{14}\) of the population—not taking into account those employed in agro-industry—are employed in agricultural production. This indicator reaches 80 % in rural areas. Agricultural output also dropped in the part of plant products, the share of which in gross agricultural output makes about two thirds. The factors contributing to reduced plant product output are presented below.

Specific geographic location. The landscape of Armenia is represented by mountains and narrow valleys. Most of the soils in Armenia are steppe ones, including chernozems, flood land soils, and flood land marsh soils (Figure 3). A large number of rare plant and animal species and nearly half of Armenian flora are concentrated in the steppe\(^{15}\). As a rule, these areas are also dry.

![Figure 3. Soils of the Republic of Armenia](image)

Environmental challenges. The process of desertification has impacted a large part of the Republic’s territory to a varying degree (Annex 1)\(^{16}\). Over 1973-2003, 140,000 ha of plough land and 300,000 ha of hay and pasture fields were withdrawn from agriculture owing to soil erosion and slips in Armenia; out of 114,000 ha of eroded land to be reclaimed about 3.5 % have been restored\(^{17}\). With plough lands shrinking and efficient water resource management called for, Armenian agriculture and irrigated arable farming become vulnerable to climate change\(^{18}\). By 2030, the moisture content of soil is expected to decline by 10-30 %, access of various crops to moisture – by 7-13 %, while water shortage

\(^{14}\) Data of the National Statistical Service of RA as of end-2011.
\(^{16}\) National Report on Implementing the UN Convention to Combat Desertification in Armenia, 2000
\(^{17}\) According to 2003 data.
will increase by 25-30\%^{19}. As can be seen in the map in Annex 2, environmental changes will affect irrigation in Armavir, Ararat, Kotaik, Vayots Dzor, and Shirak marzes\(^{20}\) most.

Limited access to resources. As a result of the agrarian reform of the 1990s, small households with average land holding of about 1.4 ha dominate in the sector—around 335,000 households all in all\(^2\). They are engaged in both crop growing and livestock farming. Small farms are faced with insufficient state support of agriculture, lack of fuel, fertilizers, quality seeds, knowledge, and financial resources.

Irrigation is the key factor of crop yield in the agricultural sector of Armenia (Figure 4); and around 80\% of agricultural output is produced on irrigated lands. In the 1980s, 280,000 ha out of 420,000 ha of plough land were actually irrigated in general in the country. Currently, 208,000 ha are effectively equipped for full or partial irrigation control: 195,000 ha are managed by WUAs users; the rest are community lands located far from irrigation networks and watered from local water sources. In 2010, only 155,200 ha of land were actually irrigated\(^{21}\).

Figure 4. Water consumption in RA agriculture by sources, 2010 (%)

![Water consumption in RA agriculture by sources, 2010 (%)](Image)

*Source: National Statistical Service of RA*

**Status of RA Irrigation Sector**

The irrigation sector in Armenia is faced with severe shortage of investments for better water and energy efficiency. Over the period after the collapse of the Soviet Union (1991), its irrigation system was on the edge of break-down as a result of lack of technical maintenance and operation, extremely insufficient state financing, and insolvency of small land owners, who had become new owners of their land plots. Around US $ 800 million were needed in 1995 to prevent destruction of irrigation systems and ensure efficient use of water resources\(^{22}\). At present, the gap between the needs of farming and the capacity of the country’s irrigation system continues growing and the level of water losses in irrigation canals make over 50\%. The need for capital investment is reinforced by the effects of climate change and growing water consumption as farmers try to switch to growing more valuable crops.

---

20 A marz is an administrative and territorial unit of RA (region).
22 SCWM data.
In the mid-1990s, a long-term national programme to restore and restructure the irrigation and drainage network was adopted in RA and from then on, the WB has been implementing programmes to recover, develop, and build up the institutional capacity of the irrigation sector in Armenia. The first and the second phases of the Project were focused on technical rehabilitation and building the institutional capacity of Armenia’s irrigation system. The following results were achieved through their implementation:

- 54 WUAs, which cover all the irrigated lands of Armenia, were established that led to:
  - rehabilitation and improvement of security systems at 44 dams;
  - reduced operating costs and improved cost recovery up to 45.2% (from 8% in 2000);
  - expanded irrigated lands—based on contracts with farmers and WUAs—from 112,300 ha to 128,860 ha;
  - reduced energy consumption—by US $ 3.4 million per year—and water losses;
  - a contribution to the financial sustainability of the irrigation system through equipping the whole system with water meters; and
  - improved incomes of households on average by 30 percent on the territory of 128,860 ha.

In 2006-2011, Armenia also implemented a programme supported by Millennium Challenge Corporation (MCC). Over that period of time, acting jointly with the WB, MCC implemented several projects, which generated the following results: 36 km of main canals were restored; 5 systems of mechanical irrigation switched to flow irrigation; 17 pump units and 250 km of on-farm canals were recovered.

However, only one third of crop area is currently irrigated, while the infrastructure of Armenia’s irrigation system needs rehabilitation and modernisation:

- main and secondary canals: 400 km need rehabilitation;
- on-farm networks: since the average canal live is 25 years, around 300-500 km need partial repair or complete rehabilitation annually—US $ 20-30 million per year;
- pump units are in a very poor condition, their useful life outlasted: one quarter of the existing networks can switch to flow irrigation, while the rest require rehabilitation; and
- reservoirs: although all the main water reservoirs have recently undergone rehabilitation or repair, the capacity of the system needs expanding through construction of new facilities.

The institutional development programmes implemented in the sector earlier have generated their positive effects, but the process of institutional reforms should be a continuous one. Up to now, the support has focused on legal and administrative issues, while the need to improve management procedures remains:

---

23 Millennium Challenge Corporation is a US state agency implementing innovative foreign aid mechanisms.
• WUAs staff do not operate efficiently enough;

• Farmers still remain improperly informed about their rights and responsibilities and are not actively involved in WUAs management;

• as WUAs strengthen, a range of supporting institutions should be created;

• the audit and dispute resolution commissions of WUAs are not active enough; and

• WUAs are poorly equipped for operation and technical maintenance of the irrigation infrastructure.
Project Description

1. Project Objectives and Components

The Project provides for allocation of resources of the EurAsEC Anti-Crisis Fund in the form of an investment loan for irrigation system rehabilitation and institutional capacity building in the Republic of Armenia.

I. Replacement of Mechanical Irrigation with Flow Irrigation

In the 1960-80s, irrigation development in certain regions was possible only if pump units were installed. The international experience shows that, with energy prices rising to the level of full economic cost, farms can bear losses.\(^\text{24}\) In 2012, energy intensive mechanical irrigation accounted for about 24% of water consumption in Armenia’s agriculture. According to the SCWM data, 18 flow irrigation systems can potentially be built, and the essential needs to replace mechanical irrigation systems with flow irrigation are estimated to make US $ 21.2 million.

The objective of this component is to reduce the costs related to supply of irrigation water by replacing mechanical irrigation (using pumps) with flow irrigation. The Project provides for construction of flow irrigation systems (Table 3).

<table>
<thead>
<tr>
<th>No.</th>
<th>Names of flow irrigation systems</th>
<th>Length of flow irrigation systems (m)</th>
<th>Location</th>
<th>RA marz</th>
<th>WUAs names</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Argichi</td>
<td>30,000</td>
<td>Gegharkunik</td>
<td>Martuni</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Amrakits</td>
<td>13,000</td>
<td>Lori</td>
<td>Lori</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Akunk</td>
<td>3,200</td>
<td>Kotaik</td>
<td>Kotaik</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Norabats and Masis</td>
<td>7,600</td>
<td>Ararat</td>
<td>Yerevan and Masis</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Nor Kharberd</td>
<td>9,500</td>
<td>Ararat</td>
<td>Yerevan</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Spitak</td>
<td>7,000</td>
<td>Lori</td>
<td>Getik</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Tsav Shikaog and Sarashen</td>
<td>7,000</td>
<td>Syunik</td>
<td>Kapan</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Artamet</td>
<td>2,000</td>
<td>Kotaik</td>
<td>Nairi</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Ptghni</td>
<td>9,500</td>
<td>Kotaik</td>
<td>Kotaik</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>88,800</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: PIU

As a result of this component implementation, mechanical irrigation systems will be replaced with flow ones for 4,250 ha of land that will generate annual savings of 16 million kWh of electricity or US $ 1.1 million.

---

II. Rehabilitation of Main and Secondary Canals

The strategic position in the irrigation sector is held by main canals as they represent the first step of water intake from natural water sources. Thus, the efficiency of the whole irrigation system depends on their reliable operation. The total length of main canals of RA major irrigation systems is around 541 km. As a result of programme implementation in 1996-2011, the most damaged sections totalling 207 km were restored. Additional 334 km of main canals are to be restored, of which priority measures are needed for 78 km.

In Armenia, there are also 2,627 km of secondary canals operated, of which 1,468 km need to be restored.

Activities under this component include rehabilitation of main and secondary canals to minimise water losses (Table 4).

Table 4. Construction of canals in the framework of the second Project component

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of canal</th>
<th>Length of section to be restored (m)</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dalarik – Myasnikyan distributor</td>
<td>4,895.0</td>
<td>Armavir</td>
</tr>
<tr>
<td>2</td>
<td>Subsidised Nairi canal</td>
<td>4,000.0</td>
<td>Kotaik</td>
</tr>
<tr>
<td>3</td>
<td>Internal Aknalich canal</td>
<td>550.0</td>
<td>Armavir</td>
</tr>
<tr>
<td>4</td>
<td>Jrarat</td>
<td>5,300.0</td>
<td>Armavir</td>
</tr>
<tr>
<td>5</td>
<td>Dasht-Aygeshat</td>
<td>1,800.0</td>
<td>Armavir</td>
</tr>
<tr>
<td>6</td>
<td>Jakartsi-Aru</td>
<td>1,400.0</td>
<td>Armavir</td>
</tr>
<tr>
<td>7</td>
<td>Arbat</td>
<td>1,800.0</td>
<td>Armavir</td>
</tr>
<tr>
<td>8</td>
<td>Left-bank Kasakh canal</td>
<td>2,000.0</td>
<td>Aragatsotn</td>
</tr>
<tr>
<td>9</td>
<td>Right arm of Kasakh canal</td>
<td>4,000.0</td>
<td>Kotaik</td>
</tr>
<tr>
<td>10</td>
<td>Margara</td>
<td>5,000.0</td>
<td>Armavir</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>30,745.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: PIU

As a result of this component implementation, canals of total length of around 31 km will be restored in Aragatsotn, Armavir, and Kotaik irrigation systems. 9,239 ha of land will be connected to reliable water supply. Implementation of this component will generate annual savings of operating costs (US $ 0.15 million) and 11.8 million m$^3$ of water (US $ 0.52 million).

III. Rehabilitation of WUAs On-Farm Distribution Network

In certain cases on-farm distribution systems do not meet the current agricultural needs. Some of the systems can be modified by introducing drip or trickle irrigation. Primary rehabilitation measures are required in the case of 230 km of on-farm networks servicing 11,500 ha. When selecting on-farm networks for rehabilitation, the focus is on most damaged canals characterised by large water losses.
and equipped with systems of mechanical water supply. In the process of Project preparation, the profiles of this component will be fully reviewed and developed for the following sections (Table 5).

Table 5. Rehabilitation of on-farm distribution systems in the framework of the third Project component

<table>
<thead>
<tr>
<th>No.</th>
<th>Location RA marz</th>
<th>Location WUAs names</th>
<th>Length of section to be restored (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ararat</td>
<td>Azat</td>
<td>17,000</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Artashat</td>
<td>11,000</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Vedi</td>
<td>16,000</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Ararat</td>
<td>15,000</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Masis</td>
<td>14,000</td>
</tr>
<tr>
<td></td>
<td><strong>Total for Ararat marz</strong></td>
<td></td>
<td><strong>73 000</strong></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Vagharshapat</td>
<td>13,000</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Hoy</td>
<td>14,000</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Musaler</td>
<td>10,000</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Araks</td>
<td>11,000</td>
</tr>
<tr>
<td>10</td>
<td>Armavir</td>
<td>Armavir</td>
<td>13,000</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>Merdzapnya</td>
<td>12,000</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>Sevjur-Ahtamar</td>
<td>8,000</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>Karakert</td>
<td>5,000</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>Shenik</td>
<td>7,000</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>Aknalich</td>
<td>10,000</td>
</tr>
<tr>
<td></td>
<td><strong>Total for Armavir marz</strong></td>
<td></td>
<td><strong>103,000</strong></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td>Ashtarak</td>
<td>9,000</td>
</tr>
<tr>
<td>17</td>
<td></td>
<td>Kasakh</td>
<td>2,000</td>
</tr>
<tr>
<td>18</td>
<td></td>
<td>Parpi</td>
<td>5,000</td>
</tr>
<tr>
<td>19</td>
<td>Aragatsotn</td>
<td>Shamiram</td>
<td>3,000</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>Aparan-Aragats</td>
<td>2,000</td>
</tr>
<tr>
<td>21</td>
<td></td>
<td>Amberd</td>
<td>3,000</td>
</tr>
<tr>
<td>22</td>
<td></td>
<td>Talin</td>
<td>10,000</td>
</tr>
<tr>
<td></td>
<td><strong>Total for Aragatsotn marz</strong></td>
<td></td>
<td><strong>34,000</strong></td>
</tr>
<tr>
<td>23</td>
<td>Kotaik</td>
<td>Yeghvard</td>
<td>4,000</td>
</tr>
<tr>
<td>24</td>
<td></td>
<td>Nairi</td>
<td>4,000</td>
</tr>
<tr>
<td></td>
<td><strong>Total for Kotaik marz</strong></td>
<td></td>
<td><strong>8 000</strong></td>
</tr>
<tr>
<td></td>
<td>Marz</td>
<td>City</td>
<td>Area in ha</td>
</tr>
<tr>
<td>---</td>
<td>--------------</td>
<td>--------------</td>
<td>------------</td>
</tr>
<tr>
<td>25</td>
<td>Gegharkunik</td>
<td>Vardenis</td>
<td>2,000</td>
</tr>
<tr>
<td>26</td>
<td></td>
<td>Martuni</td>
<td>4,000</td>
</tr>
<tr>
<td>27</td>
<td></td>
<td>Gavar</td>
<td>2,000</td>
</tr>
<tr>
<td>Total for Gegharkunik marz</td>
<td></td>
<td></td>
<td>8,000</td>
</tr>
<tr>
<td>28</td>
<td>Shirak</td>
<td>Shirak</td>
<td>5,000</td>
</tr>
<tr>
<td>Total for Shirak marz</td>
<td></td>
<td></td>
<td>5,000</td>
</tr>
<tr>
<td>29</td>
<td>Vayots Dzor</td>
<td>Yeghegnadzor</td>
<td>8,000</td>
</tr>
<tr>
<td>30</td>
<td></td>
<td>Vayk</td>
<td>2,000</td>
</tr>
<tr>
<td>Total for Vayots Dzor marz</td>
<td></td>
<td></td>
<td>10,000</td>
</tr>
<tr>
<td>31</td>
<td>Yerevan city</td>
<td>Yerevan</td>
<td>9,000</td>
</tr>
<tr>
<td>Total for Yerevan city</td>
<td></td>
<td></td>
<td>9,000</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>250,000</td>
</tr>
</tbody>
</table>

Source: PIU

As a result of implementing this component, 27,000 ha of land will be connected to reliable water supply. Implementation of this component will annually generate savings of operating costs (US $ 0.30 million), 3.0 million kWh of electricity (US $ 0.21 million), and 38.0 million m³ of water.

IV. Building WUAs Institutional Capacity and Pilot Creation of WUAs Federation

This component mainly covers the issues of building the capacity for WUAs management, WUAs technical rearmament, and creating the WUAs Federation:

1. Involving farmers in WUAs management by improving their members’ awareness of the role of WUAs, clarifying the members’ rights and responsibilities, developing mechanisms to ensure transparency and accountability in management and practical ways for conflict resolution; and

2. Ensuring broad-based support for the piloted WUAs Federation in its institution capacity building: building the organisation capacity, providing technical support, training and organising training programmes for its members, and developing a legal framework for the functioning of the Federation.

A detailed action plan will be developed for this component in the framework of implementing the ECAPDEV Trust Fund grant. Resolving the abovementioned issues in the framework of this Project will help preserve the results achieved through implementation of the preceding programmes and strengthen the responsibility of water users and efficiency of WUAs management.

2. Project Financing Needs

The overall amount of financing needs for the Project, to cover which EurAsEC ACF resources are planned to be raised, is around US $ 50 million. The amount needed and Project components will be clarified after a detailed Project FS is prepared.
The Project financing is planned to come from two sources: the budget of the Republic of Armenia in the amount of 20% of its total cost and ACF in the amount of 80%. Since Armenia has not yet borrowed ACF loans, the Project is within Armenia’s access limit for ACF funds (US $1,106.69 million).

3. Project Current Status Description

In December 2012, the ACF requested a grant of US $495,000 from the Capacity Development Trust Fund for the countries of Europe and Central Asia ECAPDEV for the Project preparation. The request was accompanied by a letter of support from the Ministry of Finance of Armenia. In April 2013, the ECAPDEV Steering Committee approved this request. In the framework of the grant implementation, training will be arranged for the staff of the Water Sector Programmes Implementation Unit of the Republic of Armenia, and efforts will be taken to prepare:

- the Project feasibility study,
- the Project environmental and social impact assessment in accordance with the WB policies,
- the strategy of WUAs institutional development, and
- project documentation, including a Project procurement and monitoring and appraisal plan.

The grant implementation will be monitored jointly with a manager from the World Bank. The actual grant implementation is expected to take 13 months.

It should be noted that, in the framework of the third phase of its programme, the WB is launching implementation of a parallel irrigation project. The projects of the ACF and WB are complimentary and serve as a follow-up to the programmes financed earlier. The two projects are coordinated through the following channels: (a) joint missions to Armenia and working contacts with the WB project manager enable sharing experience and ensuring maximum interaction, (b) the same Water Sector Programmes Implementation Unit implements both projects and regulates coordination to avoid duplication and maximise the results.

4. Projected Economic Effects of Project Implementation

Sector Development

- The Project provides for agricultural infrastructure development in the regions most subjected to drought (Figure 2): 40,487 ha of land will be connected to secure water supply.

- The key factors affecting crop yield in the agricultural sector of Armenia are irrigation and drainage. Figure 5 shows that the major consumers of irrigation water are the most fertile regions (Armavir, Ararat, Yerevan city, and Aragatsotn): while consuming around 80% of all irrigation water they produce 53% of gross crop. These marzes are located in the semi-desert geographical belt with arable farming possible there only on condition of irrigation. Thus, the Project will enable an increase in output generated by agricultural producers in Armenia and result in growth of their incomes.

---

25 National Action Programme to Combat Desertification in Armenia, 2002
The Project will help reduce operating and maintenance costs of water users and direct additional resources to cover investment needs. According to SCWM data, the total annual savings generated through the activities provided for in the Project will make 19.0 million kWh of electricity (US $ 1.31 million), 49.8 million m³ of water (US $ 2.19 million) and US $ 0.45 million of operating costs.

Figure 5. Irrigation water consumption and productivity of agriculture by RA marzes, 2010


Employment Improvement

The Project does not provide for creation of a significant number of new jobs, except for temporary ones needed for the period of construction under the Project. However, since irrigation development efforts will be taken in the regions, which in total account for over 80% of agricultural output of Armenia (Annex 3), the Project will promote new job creation in the sector.

Fiscal Efficiency

Since the Project focuses on agricultural production development, tax revenues are expected to increase owing to expansion of the tax base.

Promotion of Private Capital Inflow, Creation and Development of Market Economy Institutional and Infrastructure Framework

The Project provide infrastructure for the sector, which predominantly relies on private businesses that promotes further development of the market economy in Armenia and inflow of private investment. The Project also provides for building up WUAs institutional capacity. The Project will address the issues of WUAs efficient management and staff training.
Multiplication Effects

Taking into account specific features of the Project, it is difficult at this stage to assess the Project multiplication effects for related sectors of the economy. The Project macroeconomic multiplication effects are presented in Table 6.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>million US $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth of agricultural production</td>
<td>50</td>
</tr>
<tr>
<td>Growth of added value in agricultural sector</td>
<td>38</td>
</tr>
<tr>
<td>Growth of GDP through agricultural sector development</td>
<td>121</td>
</tr>
<tr>
<td>Growth of GDP through investments</td>
<td>79</td>
</tr>
<tr>
<td>Total GDP growth</td>
<td>200</td>
</tr>
</tbody>
</table>

Source: PIU

Innovation Capacity

The Project provides for using new technologies of lining irrigation canals to reduce water losses. One of the preconditions for improving canal waterproofing is the right choice of seam design and ensuring their high quality sealing. It is planned to use most advanced materials for seam sealing: waterproof seal keys made of high quality flexible PVC, modern liquid butyl-rubber pastes, self-adhesive water- and gas-proof materials characterised by a high degree of adhesiveness.

5. Project Consistency with the Fund’s Objectives

The proposed Project is consistent with the Fund’s objectives.

Project Relevance and Promotion of Country Development Goals

The Project supports the objectives laid out in the Sustainable Development Programme of RA (RA Government Resolution No. 1207-H of October 30, 2008), namely irrigation system rehabilitation, water supply improvement, and application of WUAs joint management principles (paragraph 8.2, 369-370).

RA Government Resolution No. 730-A (of June 18, 2012) approved RA Government Programme for 2012-2017, specifying (paragraph 3.1.7.2.) priority areas for investment:

- introduction of new water supply systems in rural areas;
- construction of water reservoirs, irrigation infrastructure rehabilitation;
- repair and reinforcement of key hydraulic engineering structures; and
- proper operation and technical maintenance of existing facilities.

To this end, RA Government has initiated a number of improvements in the institutional framework and implementation of projects aimed at creation and development of a modern infrastructure, ensuring

---

26 According to the Methodology of Assessment of Project Compliance with EDB Statutory and Strategic Objectives and Goals, a multiplication effect signifies project indirect effects on growth of GDP and employment in related sectors of the economy.

27 The table contains some projected indicators calculated based on the information about the outcomes of previous irrigation projects run by the PIU.
conditions for sustainable and efficient agriculture regulated by market mechanisms. The proposed Project will further the efforts of RA Government in this direction.

Improving Sustainability of Armenian Economy

Strengthening the external competitiveness, export diversification and export capacity improvement through promoting the development of agro-industry, improvement of the product technological complexity, agriculture capitalisation, irrigation system development, addressing the challenge of the high poverty rate, especially among rural population, remain the focus of Armenia’s economic policies. Irrigation system recovery and rehabilitation result in improved productivity of agriculture that promotes transition to higher added value production (e.g. higher calorie content feed crops). Since the Project activities are planned to cover five regions of RA\(^\text{28}\), which generate 67 %\(^\text{29}\) of the gross agricultural output, the Project will help:

- ensure growth of agricultural exports (natural juices, canned fruit and vegetables), import substitution, and balance of payment improvement in Armenia. Depending on the agro-climatic zone, irrigation can contribute a lot to farm productivity and reduce imports of plant products, which accounted for 9.1 %\(^\text{30}\) of Armenia’s imports in 2011. In 2005, net profits from growing wheat in piedmont districts were US \$ 72.2 per hectare, if the land was irrigated, that is 2.5 times higher compared to bogharic lands\(^\text{31}\). In mountain districts, net profits per hectare made US \$ 156 that is twice the level generated on bogharic lands\(^\text{32}\). Project activities to develop irrigation will take place in the regions most actively involved in growing cereals, which in total account for over 80 % of Armenian agricultural output (Annex 4);

- create new jobs in agriculture and prospects for small farm development that will promote poverty rate reduction in rural areas; and

- increase fiscal payments to the budget—agriculture accounts for a notable share of the GDP and output volatility of irrigated arable farming is lower compared to bogharic lands.

From the point of view of social aspects of development, higher incomes in agriculture will promote reduction of the poverty rate in rural areas\(^\text{33}\) and improved food security in Armenia that, in its turn, will have a positive effect on inflation through reduced pressures on the part of its food components.

Project Integration Potential

- The infrastructure created under the Project can help foreign investment inflows from other CIS countries and creation of joint ventures with them.

---

28 Three regions (Ararat, Kotaik, and Gegharkunik) are among most affected by the higher poverty rates.
29 End-2012 data of the National Statistical Service of RA.
30 The calculations are made using the data provided by the National Statistical Service of RA and United Nations Commodity Trade Statistics Database based the International Standard Industrial Classification of all Economic Activities (ISIC).
31 Bogharic lands are those, which are located in the zone of irrigated arable farming with agricultural crops grown without artificial irrigation.
33 According to the Sustainable Development Programme of RA (RA Government Resolution No. 1207-H of October 30, 2008) judging by 2005 and 2006 data, the poverty rate is higher in regions characterised by unfavourable conditions for agriculture, particularly those with a low share of irrigated arable farming.
• More regular and predictable water supply helps improve crop yield and expand mutual trade. Mutual trade expansion is possible at the investment phase. The equipment, goods and services purchased under the Project will be supplied based on tenders.

• The Project can have a moderate effect on the development of single agricultural markets of Armenia and neighbouring countries through higher trade and better economic ties.

6. Project Financing Scheme

The Borrower under the investment loan will be the Republic of Armenia represented by the Ministry of Finance of RA, while the agency responsible for Project implementation will be the State Committee of Water Management of the Republic of Armenia represented by the Water Sector Programmes Implementation Unit.

The borrowed ACF resources are a sovereign loan and make part of sovereign obligations of the Republic of Armenia. The Republic of Armenia will reflect the borrowed ACF resources in its state budget as a source of budget deficit financing and as budget expenditures to finance the National investment project, as well as budget appropriations in the volume needed for borrowed ACF resource service and repayment. This mechanism is consistent with the Regulation on the Use of ACF Funds for Providing Investment Loans.

Owing to the high growth of external borrowing and vulnerability of the debt position to external shocks, a zero limit on non-concessional lending in the overall portfolio of external government and government guaranteed loans was agreed in the framework of the IMF programme with RA for the period until June 2013. RA undertook the commitment not to raise loans and not to issue guarantees for loans, which can reduce the grant component of the portfolio to a level below 30 %.

This conditionality under the IMF programme will require a decision of the ACF Council on deviating from the Indicative conditions for using ACF funds for providing financial credits as the current Indicative conditions for using ACF funds for providing investment loans in the case of Armenia are equivalent to a grant component of 13.9 % that is below the limit of 30 % established by the IMF.

Based on the aforesaid and taking into account the need to comply with the requirement of the grant component of at least 30 %, the Manager proposes to establish the following financing terms for the requested Loan:

• interest rate: 1.65 % annual;
• risk premium: the size is proposed to be established after the Project FS is prepared;
• front-end commission: 0.2 % of the loan amount;
• commitment charge: none;
• maturity: 20 years, including a 5-year grace period; and
• requirement of Project co-financing by the Borrower: US $ 10 million (20 % of the total Project cost).

Then the grant component of the loan will be 32.58 % (without taking into account the risk premium).
7. Substantiation of Resorting to ACF

Among the donor community, it is only the WB that is currently implementing its programme in the irrigation sector. However, the WB’s country limit to finance projects in Armenia is running up and the resources available are insufficient to cover the third phase of the irrigation programme. Therefore in May 2012, the WB sent a proposal to participate in joint project financing. Owing to the differences in the project cycles of the Manager and the WB, it was decided to start developing the ACF Project separately from the WB one.

The project is a follow-up to a multi-year irrigation programme of the WB in Armenia, thus for the purposes of ensuring high standards of the overall programme, it is essential to promote high quality implementation of this Project. In 2012, the Government of the Russian Federation provided funds to create the Capacity Development Trust Fund for the countries of Europe and Central Asia to be managed by the WB. ECAPDEV Trust Fund grants can be used only to prepare operations/projects financed with the WB or ACF funds. In April 2013, The Steering Committee of the ECAPDEV approved the ACF request to get a grant for the Project preparation. Preparation of the Project with support of the grant and following the WB policies will ensure the Project compliance with the high standards of the overall programme.
# 8. Preliminary Project Risk Assessment

<table>
<thead>
<tr>
<th>Category</th>
<th>Assessment</th>
<th>Description</th>
<th>Mitigating measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project risks</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Project design</strong></td>
<td>Low level</td>
<td>The Project is a follow-up to a multi-year programme of the WB, supplementing and reinforcing the results achieved under the previous projects. All the projects in the irrigation sector are implemented by one PIU, therefore the risk of inefficient coordination with other donors is prevented. However, the risk of delays in Project implementation and budget overrun cannot be prevented.</td>
<td>• In the framework of the Project preparation, a schedule of the Project implementation will be drawn, taking into account the financial resources, while the Manager will carefully monitor compliance therewith during the Project implementation.</td>
</tr>
<tr>
<td><strong>Social and environmental risks</strong></td>
<td>Medium level</td>
<td>In accordance with the EDB policy of environmental and social responsibility, the Project is classified under category “B” as one with potentially significant environmental and social impact of local nature, which is usually reversible and/or can be prevented. This assessment is consistent with category “B” under the World Bank’s classification (Operational policies 4.01. Environmental assessment). Improvements of the irrigation infrastructure can result in more intensive agricultural production and, thus, in wider application of pesticides. The Project is planned to be implemented on uninhabited territories. Project activities will not lead to changes in the existing canal scheme. All the existing and new water intake points involved in the Project are located/will be located at water sources, which do not depend on or affect the safety of dams.</td>
<td>• The TF grant will support the PIU in planning and monitoring the social and environmental impact, a careful preliminary analysis of environmental impacts of the Project will be performed, and preventive measures will be developed; and</td>
</tr>
<tr>
<td><strong>Project monitoring risks</strong></td>
<td><strong>Low level</strong></td>
<td>The limited institutional capacity of the PIU can affect the quality and time of the Project monitoring.</td>
<td>• The TF grant will support the PIU in planning and monitoring the Project results, there will be training events arranged in this area; and • Regular missions are planned to be held to monitor the Project implementation and perform detailed review and quantitative assessment of Project risks.</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------</td>
<td>------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Project operator risks</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Capacity</strong></td>
<td><strong>Low level</strong></td>
<td>The PIU has been engaged in WB irrigation project implementation for 19 years already. There is, however, a risk that at the ACF Project implementation, the PIU will be charged with the function of and responsibility for managing another project. That may result in its lacking competent staff and working hours.</td>
<td>• The TF grant will be used to finance hiring technical consultants and SCWM staff training that will reinforce the PIU capacity.</td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td><strong>Low level</strong></td>
<td>The RA Corruption Perception Index assessed by Transparency International tended to deteriorate over the period of 2007-2011, but in 2012, it improved significantly—in 2012, Armenia ranked the 105th out of 174 countries compared to the 129th position out of 182 countries in 2011. There has been no evidence of fraud or corruption in the process of previous project implementation. Financial statements for the previous projects were prepared in compliance with the IFRS, and the financial audit identified no problems. However, the corruption and fiduciary risks related to improper use of funds cannot be precluded.</td>
<td>• In the framework of the TF grant implementation, there will be training events arranged in the area of procurement procedure application based on international standards of competition and transparency, a procurement and disbursement plan will be prepared; and • The Manager’s Project Cycle Regulations provide for compliance control procedures, including a review of Project risks related to corruption, the ownership structure and beneficiary owners of the enterprises involved in the Project.</td>
</tr>
<tr>
<td><strong>Counterpart risks</strong></td>
<td><strong>Low level</strong></td>
<td>The irrigation system is one of the strategic priorities of RA Government. At the moment, only the World Bank and the ACF are working with the Armenian irrigation sector. Their cooperation is close. But there is always a risk that: • Government priorities in the irrigation sector may change; and • Groups of the population can be damaged in the process of the Project implementation.</td>
<td>• A letter of support sent by the Ministry of Finance of Armenia, as well as a few strategic documents prove the government’s commitment to implementing irrigation projects; and • The TF grant will be used to finance consultations with WUAs and vulnerable groups of the population to take their position and needs into account at both Project and WUAs institutional development strategy preparation.</td>
</tr>
</tbody>
</table>
| **Operation risks** | Medium level | There is a risk that after the Project implementation, WUAs will not have sufficient capacity to continue efficient operations and maintenance of the irrigation facilities:  
• Low level of the technical basis;  
• Low water fee collection rate; and  
• Low institutional capacity of WUAs. | • A scheme of joint management of irrigation systems and a conflict resolution mechanism will be developed in the framework of the Project preparation; and  
• In the framework of the Project, training for farmers and WUAs, as well as technical rearmament of WUAs are planned. |

| **Legal risks** | Low level | In the process of the Project implementation and financing, there may be risks arising in connection with the need for the Project participants to obtain permits, licenses, and other documents in accordance with the national legislation of RA or international agreements, as well as those related to drawing the loan agreement and accompanying documents. | It is planned to get the Manager’s legal consultant involved to mitigate these risks. |
Annex 1

Map of the territories subject to desertification in the Republic of Armenia

Source: National Action Programme to Combat Desertification in Armenia, 2002
Annex 2

Map of the Republic of Armenia to show Vulnerability of Armenia's marzes to hazardous hydro-meteorological phenomena

Source: UNFCCC Second National Communication
Annex 3

Distribution of agricultural output by marzes of RA, 2011

% - share of the marz in Armenia’s agricultural output

Marz – marz covered by the Project

Source: National Statistical Service of RA
Annex 4

Distribution of main crops production by marzes in the RA

Source: UNFCCC Second National Communication